

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

PCT

To:

see form PCT/ISA/220



WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY (PCT Rule 43bis.1)

Date of mailing
(day/month/year) see form PCT/ISA/210 (second sheet)

Applicant's or agent's file reference
see form PCT/ISA/220

FOR FURTHER ACTION
See paragraph 2 below

International application No.
PCT/JP2004/015346

International filing date (day/month/year)
12.10.2004

Priority date (day/month/year)
15.10.2003

International Patent Classification (IPC) or both national classification and IPC
H04B7/08

Applicant
MATSUSHITA ELECTRIC INDUSTRIAL CO., LTD.

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☒ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will usually be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA"). However, this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of three months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA:



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Box No. I Basis of the opinion

1. With regard to the **language**, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.
 - ☐ This opinion has been established on the basis of a translation from the original language into the following language , which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).
2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
 - a. type of material:
 - ☐ a sequence listing
 - ☐ table(s) related to the sequence listing
 - b. format of material:
 - ☐ in written format
 - ☐ in computer readable form
 - c. time of filing/furnishing:
 - ☐ contained in the international application as filed.
 - ☐ filed together with the international application in computer readable form.
 - ☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.
PCT/JP2004/015346

Box No. II Priority

1. ☒ The following document has not been furnished:

☒ copy of the earlier application whose priority has been claimed (Rule 43*bis*.1 and 66.7(a)).

☐ translation of the earlier application whose priority has been claimed (Rule 43*bis*.1 and 66.7(b)).

Consequently it has not been possible to consider the validity of the priority claim. This opinion has nevertheless been established on the assumption that the relevant date is the claimed priority date.

2. ☐ This opinion has been established as if no priority had been claimed due to the fact that the priority claim has been found invalid (Rules 43*bis*.1 and 64.1). Thus for the purposes of this opinion, the international filing date indicated above is considered to be the relevant date.

3. ☐ It has not been possible to consider the validity of the priority claim because a copy of the priority document was not available to the ISA at the time that the search was conducted (Rule 17.1). This opinion has nevertheless been established on the assumption that the relevant date is the claimed priority date.

4. Additional observations, if necessary:

Box No. V Reasoned statement under Rule 43*bis*.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	1-11
	No: Claims	NONE
Inventive step (IS)	Yes: Claims	1-11
	No: Claims	NONE
Industrial applicability (IA)	Yes: Claims	1-11
	No: Claims	NONE

2. Citations and explanations

see separate sheet

Re Item V

**Reasoned statement with regard to novelty, inventive step or industrial applicability;
citations and explanations supporting such statement**

Reference is made to the following document:

D1: DE 102 10 238 A (ADVANCED MICRO DEVICES INC) 9 October 2003 (2003-10-09)

1. The document D1 is regarded as being the closest prior art to the subject-matter of claim 1, and shows (the references in parentheses applying to this document) a diversity receiving apparatus for receiving a packet (paragraph [0001]) having embedded therein symbols which are multiple repetitions of a pattern signal having a predetermined pattern (paragraph [0028] and figure 6), the apparatus comprising:
 - a plurality of antennas (figure 9: ref. signs 102, 104);
 - an antenna switching section for selecting an antenna from the plurality of antennas and outputting a signal received by the selected antenna as a received signal (figure 9: ref. signs 106);
 - a gain amplifier section for amplifying the received signal outputted from the antenna switching section and outputting the amplified signal (figure 9: AGC 108);
 - a gain control section for controlling a gain of the gain amplifier section (figure 9: AGC 108);
 - a power measurement section for measuring an instantaneous power of an output signal from the gain amplifier section (figure 9: AGC 108).
2. The subject-matter of claim 1 differs from this known apparatus in that it further comprises
 - an averaging section for taking an average of the instantaneous power measured by the power measurement section on an averaging period-by-averaging period basis, and measuring the average powers, the averaging period having the same time length as one period of the pattern signal; and
 - a control section for controlling the gain control section so that the gain amplifier section has a desired gain, and controlling a selection of the antennas made by the antenna switching section, wherein during all or part of a time period during which the pattern signals are received, the control section allows the gain control section to fix the gain of the gain amplifier section, allows the antenna switching section to sequentially switch the selection of the antennas during antenna switching periods

which are synchronized with the averaging periods, and determines an antenna to receive data contained in the packet, based on levels of the average powers measured by the averaging section on an averaging period-by-averaging period basis.

The subject-matter of claim 1 is therefore new (Article 33(2) PCT).

3. These special technical features have the technical effect that the delay caused by the convergence time of the AGC is avoided during the antenna switching periods.
4. The problem to be solved by the present invention may therefore be regarded as how to speed up antenna selection.
5. The solution to this problem proposed in claim 1 of the present application is considered as involving an inventive step (Article 33(3) PCT) for the following reasons:

No available prior art document suggests or hints at the problem stated under point 4 nor does any prior art document disclose or hint at the missing features as stated under point 2 or render them obvious.

6. Claims 2-11 are dependent on claim 1 and as such also meet the requirements of the PCT with respect to novelty and inventive step.